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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,142	03/23/2004	Kazuo Shirota	0171-1075PUS1	1976
2292 7590 02/07/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER DEHGHAN, QUEENIE S	
			ART UNIT	PAPER NUMBER
			1731	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/806,142	Applicant(s) SHIROTA ET AL.	
	Examiner Queenie Dehghan	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☒ Claim(s) 1-13 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 9 and 13 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 1-8, 10-12 are drawn to a burner apparatus and claims 9 and 13 are drawn to a method for manufacturing a preform. The inventions are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as torch for heating.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 9 and 13 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Objections

1. Claim 3 is objected to because of the following informalities: the status indicator for claim 3 indicates the claim was amended, but it does not appear to be so.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what structural limitations the functional language of claims 5-8 impose on claimed apparatus.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya (English machine translation of JP 05-009035). Kamiya discloses a burner comprising a multi-tube assembly consisting of three tubes and two tubular shells with nozzles disposed in the annular space of the tubular shells ([0010], drawing 1). The apparatus of Kamiya has the structural features of the applicant's claim and is capable of the fulfilling the intended use as disclosed by the applicant. See MPEP §2114.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2-3 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (English machine translation of JP 05-009035), as applied to claim 1 above, in view of Komine et al. (6,374,639). Kamiya fails to disclose a cross sectional area of the annular space that the nozzles account for. Komine et al. teach of a burner used for silica glass comprising of nozzles within an annular space (figure 1), wherein the nozzles account for 8% to 13% of the cross sectional area of the annular space between a multi-tube assembly and a tubular shell (col. 6 lines 24-53).

$$(t0/2)+t1+t2 = 2.25mm+1.0mm+1.0mm = 4.25mm = \text{radius of multi-tube}$$

$$t3+t2+t1+(t0/2)=45mm+4.25mm = 49.25mm = \text{radius of tubular shell}$$

$$\text{area of annular ring} = 7563.38\text{mm}^2$$

$$\text{area of one nozzle} = 28.27\text{mm}^2$$

$$\text{area of the nozzles} = 22 \times 28.27\text{mm} = 621.94\text{mm}^2$$

$$\text{percent} = 621.94/7563.38 = 8.22\%$$

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of the cross sectional area of the nozzles in each of the annular spaces with the nozzles in the apparatus of Kamiya in order to allow for the hydrogen and oxygen gases to react more uniformly, as taught by Komine et al.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (English machine translation of JP 05-009035) in view of Roba et al. (2004/0112092). Kamiya fail to disclose a tubular jacket around the main burner. Roba et al. teach a tubular jacket disposed outside the main burner to surround an end portion of the burner (item 208 in figure 1, [0054]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the tubular jacket of Roba et al. in the apparatus of Kamiya in order to confine the flame, as taught by Roba et al.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (English machine translation of JP 05-009035) in view of Komine et al. (6,374,639) and Roba et al. (2004/0112092). Kamiya discloses a burner comprising a multi-tube assembly consisting of three tubes and two tubular shells with nozzles disposed in the annular space of the tubular shells ([0010], drawing 1). The apparatus of Kamiya has the structural features of the applicant's claim and is capable of the fulfilling the intended use as disclosed by the applicant. See MPEP §2114. However, Kamiya fails to disclose

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a cross sectional area of the annular space that the nozzles account for. Komine et al. teach of a burner used for silica glass comprising of nozzles within an annular space (figure 1), wherein the nozzles account for 8% to 13% of the cross sectional area of the annular space between a multi-tube assembly and a tubular shell (col. 6 lines 24-53).

$$(t0/2)+t1+t2 = 2.25mm+1.0mm+1.0mm = 4.25mm = \text{radius of multi-tube}$$

$$t3+t2+t1+(t0/2)=45mm+4.25mm = 49.25mm = \text{radius of tubular shell}$$

$$\text{area of annular ring} = 7563.38mm^2$$

$$\text{area of one nozzle} = 28.27mm^2$$

$$\text{area of the nozzles} = 22 \times 28.27mm = 621.94mm^2$$

$$\text{percent} = 621.94/7563.38 = 8.22\%$$

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of the cross sectional area of the nozzles in each of the annular spaces with the nozzles in the apparatus of Kamiya in order to allow for the hydrogen and oxygen gases to react more uniformly, as taught by Komine et al. Furthermore, Kamiya fail to disclose a tubular jacket around the main burner. Roba et al. teach a tubular jacket disposed outside the main burner to surround an end portion of the burner (item 208 in figure 1, [0054]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the tubular jacket of Roba et al. in the apparatus of Kamiya in order to confine the flame, as taught by Roba et al.

Response to Arguments

9. Applicant's arguments filed November 7, 2006 have been fully considered but they are not persuasive. In the applicant's remarks regarding the amended of claim 1 from a multi-tube comprising to a multi-tube consisting of 3 tubes, the main burner is still *comprising of* a multi-tube burner. It is the multi-tube that is "consisting of" and not the main burner. Furthermore, on page 7, the applicant mentions that the burner of Kamiya feed different gases to the different tubes, which is not in line with the functional limitations of the claim 1. The intended use of the burner does not provide a structural limitation to the burner. Since the burner of Kamiya has all the structural limitations recited in claim 1; it is therefore capable of supplying the desired gases to the desired tubes/nozzles. In regards to argument regarding claims 2-3 with regards to Komine et al. and Kamiya, the applicant argues that the art of Komine lacks two shells. Komine teaches an annular tube for supplying hydrogen with nozzles located in the annular space for supplying oxygen. Komine also teaches the cross-sectional area one should use when employing an annular ring with nozzles. Komine was not used to teach two shells with nozzles, especially since Kamiya has already disclosed it is known in the art to have such a burner. In regards to the prior art of Roba, the applicant argues that Roba does not teach first and second nozzles. Roba was not used to teach first and second nozzles, but instead that a burner with a tubular jacket.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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